

Limiting Bias

Promising Practices For Searches



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UNIVERSITY OF CALIFORNIA DIVERSITY STATEMENT

Endorsed as Amended by the President of the University of California
August 17, 2010 <http://www.universityofcalifornia.edu/diversity/diversity.html>

Diversity refers to the variety of personal experiences, values and worldviews that arise from differences of culture and circumstance. Such differences include race, ethnicity, gender, age, religion, language, abilities/disabilities, sexual orientation, gender identity, socioeconomic status, and geographic region, and more.

AT UCSF WE ARE COMMITTED TO THE BEST

Our vision: to be the world's preeminent health sciences innovator

I. Excellence Requires Diversity

People who are different from one another bring unique information and experiences

- Diverse groups are more innovative and creative^{1,2}
- Papers written by diverse groups have more citations and higher impact factors³
- Diverse groups share more information with others in the group⁴

Employee engagement is a validated predictor of organizational performance

Diverse workplaces with culturally competent workforces have the highest employee engagement^{5,6}

US CENSUS

PROFESSIONAL PHARMACY

African American	13.4%	-----	8.3%	African American
Hispanic/Latinx	18.5%	-----	3.4%	Hispanic/Latinx
Asian	5.9%	-----	20.0%	Asian
White	60.1%	-----	67.9%	White

Bureau of Labor Statistics, 2021

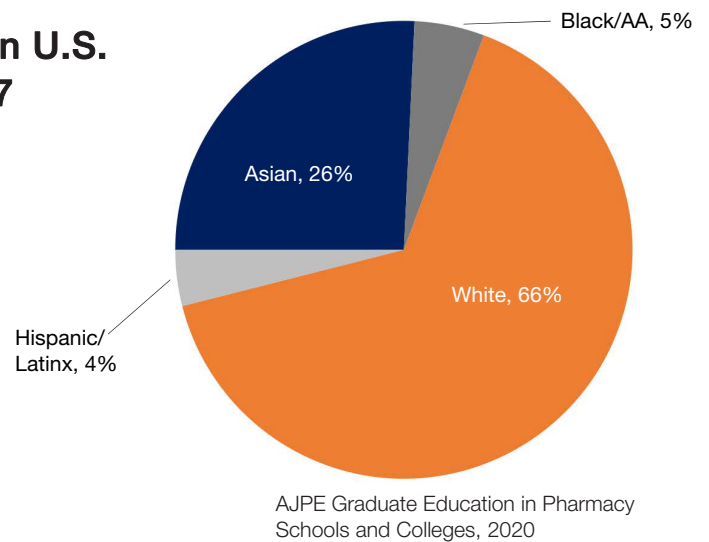


BY THE NUMBERS

Representation in Pharmacy

- In 2020, 62% of pharmacists were women.⁷
- In 2019, 64% of enrollees in first professional degree programs were women and 17% were underrepresented minorities.⁸
- In 2018-2019, 37% of Pharm.D.s and 53% of Ph.D.s in Pharmacy went to men.⁹
- In 2020, the gap between median weekly earnings for men and women employed as full-time pharmacists was 5.5%, with male median weekly earnings at \$2,286 and female median weekly earnings at \$2,160.⁹

Racial/ethnic representation of faculty in U.S. schools and colleges of pharmacy, 2017



CALIFORNIA CENSUS

African American	6%	-----
Hispanic/Latinx	39%	-----
Asian	15%	-----
White	37%	-----
Native Hawaiian/ Pacific Islander	1%	-----
Native American	1%	-----
Two or More Races	3%	-----
Unknown	0%	-----

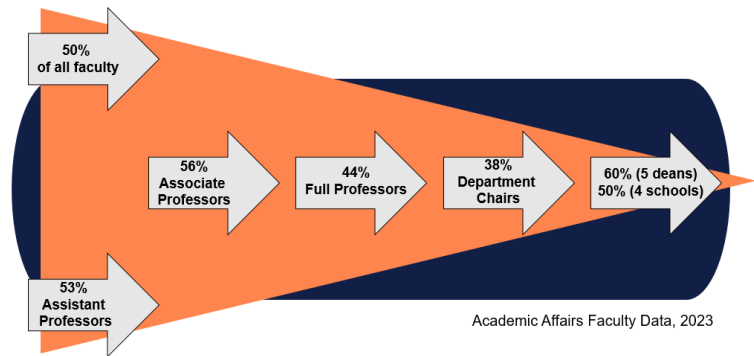
CALIFORNIA PHARMACY GRADUATES

African American	3%
Hispanic/Latinx	5%
Asian	63%
White	19%
Native Hawaiian/ Pacific Islander	1%
Native American	1%
Two or More Races	3%
Unknown	5%

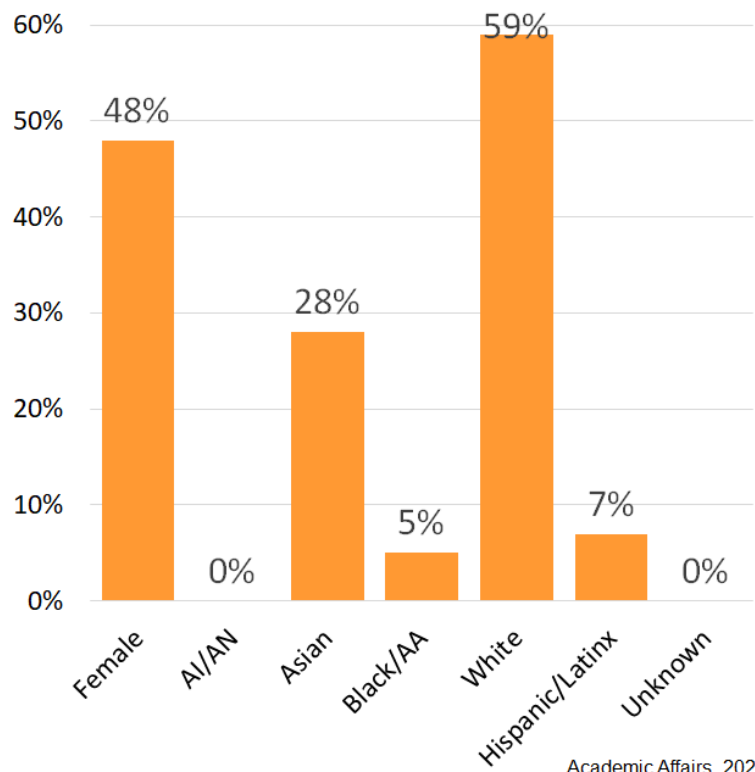
California Health Care Foundation, 2021

Representation at UCSF

Female faculty pipeline, UCSF



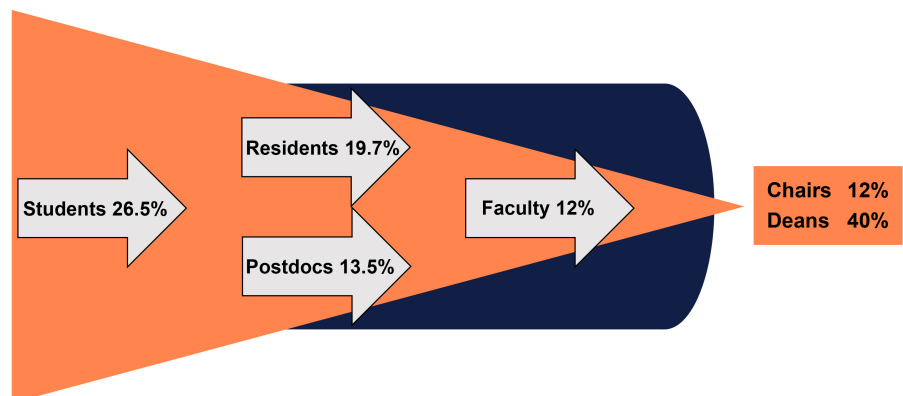
Gender/race/ethnicity UCSF School of Pharmacy faculty



Underrepresented minority (URM¹) pipeline, UCSF

¹UCSF Definition of URM: Someone whose racial or ethnic makeup is from one of the following: African American / Black; Asian; Filipino, Hmong, or Vietnamese; Hispanic / Latinx; Native American / Alaskan Native; Native Hawaiian / Other Pacific Islander; or Two or more races when one or more are from the preceding racial and ethnic categories in this list.

In addition: Women in traditionally male dominated specialties; Males in traditionally female dominated specialties; and Historically marginalized individuals: LGBT, individuals with disabilities



We recognize the connection between diversity and innovation.
Our goal is to be the workplace of choice for diverse, top-tier talent.

-UCSF'S 2014-2015 PLAN

II. Unconscious Bias May Impede Selecting The Best

“The greatest barrier to achieving gender equity in STEMM is systematic bias, frequently unconscious”
- National Academy of Sciences”

Social stereotypes that individuals form outside of conscious awareness

- All of us hold unconscious beliefs about various social and identity groups
- Stems from our tendency to organize social worlds by categorizing
- Often incompatible with conscious values

We all have biases

Data we receive from others may be biased

Certain scenarios can activate unconscious stereotypes and attitudes

- Project Implicit: 75% of people have implicit biases or associations
- Unconscious biases tend to map to existing social hierarchies⁷
 - Favor men, Whites, youth, heterosexuals, and physically able
- Men = Science; Women = Liberal Arts
 - E.g., Biases about rating of males and females on a math lab task was related to IAT sex-related beliefs⁸
- Asian = Feminine; Black = Masculine
 - On the IAT, participants primed with the word Asian responded most quickly to words they had rated as more feminine whereas participants primed with the word Black responded most quickly to words they had rated as more masculine.⁹
- Unconscious biases are more likely to emerge in certain situations, such as when multi-tasking or under time pressure (i.e., "high cognitive load")^{8,10}

Seminal studies and contemporary research have shown that unconscious bias influences hiring, evaluation, and selection and perception of leaders

Evaluation of CVs

- Selection of “Brian over Karen” 2x as often¹¹
- 50% higher call back rate if named “Emily and Gregg” vs “Lakisha and Jamal”¹²
 - Adewale and Ngochi (Black Africans) also seen as more employable than “Lakisha and Jamal”¹³
- Whites & Hispanics benefit from quality resume; Blacks evaluated negatively even with quality resume
 - Occupational stereotypes: Asians high status regardless of resume, Blacks and Hispanics lower status¹⁴
- “Whitened Resumes”: racial minorities’ attempts to downplay ethnic/racial cues
 - Less resume whitening if employer specifies valuing diversity¹⁵

Motherhood Penalty

- Mothers perceived as less competent; offered lower starting salaries^{16,17} and less likely to be hired & promoted compared to fathers & employees without children¹⁸
- Fathers not penalized; at times, there is a “fatherhood premium”
 - Fathers less likely to be laid off during Covid-19 than all other groups, including mothers and people without children¹⁹

Evaluation of reference letters

- More “standout” adjectives for males²⁰
- Women’s letters shorter, contained more “doubt raisers” & focus on teaching; men as researchers²¹
- More “communal” adjectives for women and “agentic” adjectives for men²²

Bias into academic pathways

- Faculty more likely to respond to research inquiry requests from fictional White male doctoral students than any other group²³
- When reviewing identical student resumes, research faculty rated men as more competent than women, with higher starting salaries²⁴

Leadership

- Women often overlooked for leadership potential
 - Men more likely to be valued for leadership potential
 - Women valued for demonstrated leadership performance²⁵
- Women in leadership penalized more often than men for displays of emotion, especially pride or anger.
 - However, women also penalized for being emotionally unexpressive e.g., not warm²⁶

Evaluation of contributions

- Women less likely to get credit for joint efforts²⁷
- Women who co-author more often less likely to receive tenure
 - Men receive tenure at similar rates regardless of solo or co-authorship²⁸
- Research topics/approaches more likely to be undertaken by URM viewed as peripheral to academic fields and devalued in advancement²⁹

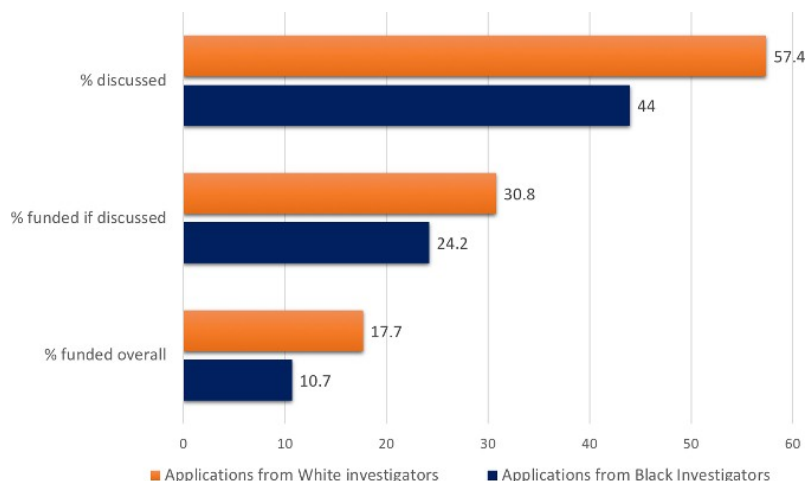
Evaluation of contributions

NIH Review

- Black applicants 10% less likely than Whites to receive NIH investigator initiated research grants ³⁰

Part of the disparity due to topic choice ³¹

- Black applicants more likely to be associated with topics like health disparities, disease prevention and intervention, socioeconomic factors, healthcare, lifestyle, psychosocial, adolescent, and risk



Funding gap between Black and White scientists at each stage of the R01 application and review process

III. How to combat unconscious bias

On the individual level

Enhance internal motivation to reduce bias

- Recognize unconscious bias (IAT)

Implicit bias is changeable ³²

- Knowledge of bias can reduce its impacts
- New information can cause reinterpretation of scenario
- Priming has an effect: Can counter stereotypes
- Enhance perspective taking and communication skills
- Facilitated discussions with colleagues from diverse groups

On the institutional level

- Concrete, objective indicators & outcomes reduce standard stereotypes ³³⁻³⁵
- Decreasing ambiguity about individual contributions to joint outcome reduces bias in performance evaluation ³⁰
- Use structured interviews and objective evaluation criteria ^{35,36}
- Commit to specific credentials before reviewing applications ³⁷
- Allow sufficient time as bias stronger when under time pressure ^{32,36,38}
- Accountability for decision makers ^{39,40}
- Provide training workshops ³⁸



Key Links and Additional Resources

Office of Diversity and Outreach
<https://diversity.ucsf.edu/>

UCSF Faculty Equity Advisors
<https://diversity.ucsf.edu/faculty-equity-advisor>

UCSF Leadership Equity Advances Diversity (LEAD) Advancing Faculty Diversity Grant
<https://diversity.ucsf.edu/advancing-faculty-diversity-grant-lead>

University of California Coro Project: Leading with Diversity: Strategies for Recruitment and Retention
<https://www.ucop.edu/human-resources/coro/uc-coro-cohort-projects.html>

University of California: Guidelines for Addressing Race and Gender Equity in Academic Programs in Compliance with Proposition 209
<https://www.ucop.edu/uc-legal/files/guidelines-equity.pdf>

University of California Diversity Reports, Key Resources and Initiatives, and Data
<https://www.ucop.edu/faculty-diversity/index.html>

AAMC Unconscious Bias Resources for Health Professionals
<https://www.aamc.org/what-we-do/diversity-inclusion/unconscious-bias-training>

AAMC E-learning seminar: The Science of Unconscious Bias
https://www.aamc.org/initiatives/leadership/recruitment/17842/0/unconscious_bias.html

NIH Scientific Workforce Diversity Toolkit
https://diversity.nih.gov/sites/coswd/files/images/SWD_Toolkit_Interactive_updated_508.pdf

Implicit Association Test:
<https://implicit.harvard.edu/implicit/>

References

1. Page SE. Making the Difference: Applying a Logic of Diversity. *Academy of Management Perspectives*. 2007;21(4):6-20.
2. Page SE. *The diversity bonus: How great teams pay off in the knowledge economy*. Princeton University Press; 2017.
3. Freeman RB, Huang W. Strength in diversity: reflect on a link between a team's ethnic mix and highly cited papers. *Nature*. 2014;513(7518):305.
4. Li CR, Lin CJ, Tien YH, Chen CM. A multilevel model of team cultural diversity and creativity: The role of climate for inclusion. *The Journal of Creative Behavior*. 2017;51(2):163-179.
5. Downey SN, van der Werff L, Thomas KM, Plaut VC. The role of diversity practices and inclusion in promoting trust and employee engagement. *Journal of Applied Social Psychology*. 2015;45:35-44.
6. Goswami S, Goswami BK. Exploring the Relationship between Workforce Diversity, Inclusion and Employee Engagement. *Drishtikon: A Management Journal*. 2018;9(1).
7. Nosek BA, Smyth FL, Sriram N. National differences in gender science stereotypes predict national sex differences in science and math achievement. *Proceedings of the National Academy of Sciences*. 2009;106(26):10593.
8. Reuben E, Sapienza P, Zingales L. How stereotypes impair women's careers in science. *Proc Natl Acad Sci U S A*. 2014;111(12):4403-4408.
9. Galinsky AD, Hall EV, Cuddy AJ. Gendered races: implications for interracial marriage, leadership selection, and athletic participation. *Psychol Sci*. 2013;24(4):498-506.
10. Wigboldus DHJ, Sherman JW, Franzese HL, van Knippenberg A. Capacity and Comprehension: Spontaneous Stereotyping Under Cognitive Load. *Social Cognition*. 2004;22(3):292-309.
11. Steinpreis RE, Anders KA, Ritzke D. The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. *Sex Roles*. 1999;41(7):509-528.
12. Bertrand M, Mullainathan S. Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review*. 2004;94(4):991-1013.
13. Howard S, Borgella AM. Are Adewale and Ngochi more employable than Jamal and Lakeisha? The influence of nationality and ethnicity cues on employment-related evaluations of Blacks in the United States. *J Soc Psychol*. 2020;160(4):509-519.
14. King EB, Mendoza SA, Madera JM, Hebl MR, Knight JL. What's in a name? A multiracial investigation of the role of occupational stereotypes in selection decisions. *Journal of Applied Social Psychology*. 2006;36(5):1145-1159.
15. Kang SK, DeCelles KA, Tilcsik A, Jun S. Whiteness résumés: Race and self-presentation in the labor market. *Administrative Science Quarterly*. 2016;61(3):469-502.
16. Correll SJ, Benard S, Paik I. Getting a job: Is there a motherhood penalty? *American Journal of Sociology*. 2007;112(5):1297-1338.
17. Heilman ME, Okimoto TG. Motherhood: a potential source of bias in employment decisions. *J Appl Psychol*. 2008;93(1):189-198.
18. Cuddy AJ, Fiske ST, Glick P. When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues*. 2004;60(4):701-718.
19. Dias FA, Chance J, Buchanan A. The motherhood penalty and the fatherhood premium in employment during covid-19: evidence from The United States. *Research in Social Stratification and Mobility*. 2020;69:100542.
20. Schmader T, Whitehead J, Wysocki VH. A linguistic comparison of letters of recommendation for male and female chemistry and biochemistry job applicants. *Sex roles*. 2007;57(7):509-514.
21. Trix F, Psenka C. Letters of recommendation for female and male medical faculty. *Discourse & Society*. 2003;14(2):191-220.
22. Khan S, Kirubarajan A, Shamsheer T, Clayton A, Mehta G. Gender bias in reference letters for residency and academic medicine: a systematic review. *Postgrad Med J*. 2021.
23. Milkman KL, Akinola M, Chugh D. What happens before? A field experiment exploring how pay and representation differentially shape bias on the pathway into organizations. *J Appl Psychol*. 2015;100(6):1678-1712.
24. Moss-Racusin CA, Dovidio JF, Brescoll VL, Graham MJ, Handelsman J. Science faculty's subtle gender biases favor male students. *Proc Natl Acad Sci U S A*. 2012;109(41):16474-16479.
25. Player A, Randsley de Moura G, Leite AC, Abrams D, Tresh F. Overlooked Leadership Potential: The Preference for Leadership Potential in Job Candidates Who Are Men vs. Women. *Front Psychol*. 2019;10:755.
26. Brescoll VL. Leading with their hearts? How gender stereotypes of emotion lead to biased evaluations of female leaders. *The Leadership Quarterly*. 2016;27(3):415-428.
27. Heilman ME, Haynes MC. Combating organizational discrimination: Some unintended consequences. *Discrimination at Work: The Psychological and Organizational Bases*. 2005:353-377.
28. Sarsons H, Gèrxhani K, Reuben E, Schram A. Gender differences in recognition for group work. *Journal of Political Economy*. 2021;129(1):101-147.
29. Settles IH, Buchanan NT, Dotson K. Scrutinized but not recognized: (In)visibility and hypervisibility experiences of faculty of color. *Journal of Vocational Behavior*. 2019;113:62-74.
30. Ginther DK, Schaffer WT, Schnell J, et al. Race, ethnicity, and NIH research awards. *Science*. 2011;333(6045):1015-1019.
31. Hoppe TA, Litovitz A, Willis KA, et al. Topic choice contributes to the lower rate of NIH awards to African-American/black scientists. *Sci Adv*. 2019;5(10):eaaw7238.
32. Staats C, Capatosto K, Tenney L, Mamo S. *State of the Science: Implicit Bias Review, 2017 Edition*. Columbus, OH: The Ohio State University, Kirwan Institute; 2017.
33. Biernat M, Manis M. Shifting standards and stereotype-based judgments. *Journal of Personality and Social Psychology*. 1994;66(1):5.
34. Fiske ST, Taylor SE. *Social Cognition*. 2nd ed. New York: McGraw-Hill; 1991.
35. Heilman ME. Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*. 2001;57(4):657-674.
36. Martell RF, Guzzo RA. The dynamics of implicit theories of group performance: When and how do they operate? *Organizational Behavior and Human Decision Processes*. 1991;50(1):51-74.
37. Uhlmann E, Cohen GL. Constructed criteria: redefining merit to justify discrimination. *Psychol Sci*. 2005;16(6):474-480.
38. Blair IV, Banaji MR. Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology*. 1996;70(6):1142-1163.
39. Foschi M. Double standards in the evaluation of men and women. *Social Psychology Quarterly*. 1996:237-254.
40. Foschi M. Double standards for competence: Theory and research. *Annual Review of Sociology*. 2000;26(1):21-42.